

## ABSTRACT

To provide a regenerator and cryogenics pump using a regenerator material which fulfils such requirements as specific heat, thermal conductivity, manufacturing easiness, 5 strength, hardness, chemical stabilization and low cost instead of Pb which is environmentally harmful.

In a regenerator 14 which contains regenerator material 16 in internal path for refrigerant and in which heat is exchanged between the helium gas as refrigerant and regenerator material, said regenerator material 16 is any one of Sn, Bi-Sn alloy and 10 Ag-Sn alloy. The regenerator material 16 is spherical. Plural spheres are packed in the internal path of the regenerator 14.